State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. R4-2005-XXXX
(File No. 68-85)

WASTE DISCHARGE AND WATER RECYCLING REQUIREMENTS
FOR
TITLE 22 RECYCLED WATER

ISSUED TO

CITY OF LOS ANGELES
(Los Angeles-Glendale Water Reclamation Plant)

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The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board), finds:

BACKGROUND

1. Chloride concentrations in tertiary-treated wastewater effluent used as recycled water produced at the Los Angeles-Glendale Water Reclamation Plant (Los Angeles-Glendale WRP) have continued to rise over the years due to the following major reasons:

   A. During recent periods of drought, the City of Los Angeles (City), as well as other agencies, have augmented their source water with additional purchases from the Metropolitan Water District. This source water has significantly escalating chloride concentrations as a result of drought conditions.

   B. In addition, a significant amount of chloride loading may occur from the use of water softeners.

2. In order to encourage the use of recycled water in the Los Angeles Region and to allow the use of recycled water for irrigation, park and recreational, and industrial purposes from the Los Angeles-Glendale WRP in lieu of scarce potable water resources, the City requested that the chloride limit in this permit should be raised from 150 mg/L in the current permit (Order No. 86-16, adopted on June 23, 1986) to 190 mg/L, which is presently in the Resolution No. 97-072, *Amendment to the Water Quality Control Plan to Incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewater* (see Finding No. 12), adopted on January 27, 1997, and in the National Pollutant Discharge Elimination System (NPDES) permit (No. CA0053953, Order No. 98-047, adopted on June 15, 1998). Under the NPDES Permit No. CA0053953, Order No. 98-047, the Los Angeles-Glendale WRP's tertiary-treated wastewater is discharged to the Los Angeles River. However, no similar chloride relief was provided for recycled water used for irrigation, recreation, or industrial purposes.

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PURPOSE OF ORDER

3. This Order is a Waste Discharge Requirements (WDRs) and Water Recycling Requirements (WRRs) permit reissued to the City pursuant to California Water Code section 13523.1. This Order prescribes the new limits for the recycled water and the City's responsibilities for the production, distribution, monitoring, and application of recycled water. The City is also responsible for processing individual end-users' applications, inspecting point-of-use facilities, and ensuring end-users' compliance with the water recycling requirements contained in this Order. The actual delivery of recycled water to end-users is subject to approval by the California Department of Health Services (DHS), and/or its delegated local health agency.

DESCRIPTION OF FACILITY AND TREATMENT PROCESS

4. The City of Los Angeles operates the Los Angeles-Glendale WRP located at 4600 Colorado Boulevard, Los Angeles, California, and treats wastewater generated from the cities of Glendale, Burbank, Los Angeles, La Canada~Flintridge, and from the Los Angeles Zoo. The plant has a dry weather design capacity of 20.0 million gallons per day. All or a portion of the treated municipal wastewater may be reused for irrigation in Griffith Park, general park and golf course irrigation, fire fighting uses, and impoundments. A portion of the recycled water not utilized in Griffith Park may be sold by the City of Los Angeles for industrial cooling, cemetery irrigation, or irrigation of other parks.

5. Treatment consists of primary sedimentation, activated sludge biological treatment, secondary sedimentation, filtration, chlorination, and dechlorination. The sludge from the primary and secondary treatment processes will be returned to the North Outfall Interceptor sewer line for treatment at the City of Los Angeles Hyperion Treatment Plant.

6. Modifications to the Treatment Plant: Los Angeles-Glendale WRP made changes to its treatment system to conduct a pilot study on nitrification and de-nitrification (NDN) process that would limit the nitrogen compounds in its effluent, as required by nitrogen TMDL, Resolution No. R4-2003-009, adopted by Regional Board on July 10, 2003. Los Angeles-Glendale WRP is making changes to its Wastewater Treatment Plant to achieve compliance with the nitrogen compounds by 2008. Currently, Los Angeles-Glendale WRP is in compliance with the total nitrogen limitation prescribed in the existing WRRs.

RECYCLED WATER QUALITY

7. The treatment process at the Los Angeles-Glendale WRP produces Title 22 Recycled Water, which can be used for irrigation, recreation, and industrial purposes.

8. Los Angeles-Glendale WRP produces recycled water containing chloride concentrations in the range of 140 mg/l to 175 mg/l.

9. The new chloride limit will accommodate fluctuations in chloride concentrations that may occur in the future and will still be below secondary drinking water standards (250 mg/l to 500 mg/l).

10. In a March 28, 2004 letter, the City provided the mass balance analysis results for chloride and TDS. The mass balance analyses were conservative as they did not take into account the effect of using proper irrigation practices, or the areas underlain primarily by clay where recharge is limited, and the City assumed that recycled water will always have a chloride concentration of 190 mg/L. Under average conditions, replacement of 10,000 AFY of imported water with 10,000 AFY of recycled water will increase chloride and TDS loadings in the San Fernando Basin from approximately 31 mg/L to 45 mg/L and 225 mg/L to 257 mg/L, respectively. The mass balance analysis results indicate that long term affects of using recycled water will not result in groundwater chloride and TDS concentrations in excess of the Basin Plan's groundwater quality objectives for the San Fernando Basin. In addition, the mass balance analysis results support the City's request that the chloride limit in the Water Recycling Requirements for irrigation use of the Los Angeles-Glendale WRP's effluent should be modified to 190 mg/L. Monitoring required by this Order will verify that there is no adverse impact to groundwater quality as a result of the application of recycled water with a chloride concentration of 190 mg/L.

11. To assess potential increases in overall chloride levels due to the long-term application of reclaimed water, the Los Angeles Department of Water and Power is required to implement a ground water monitoring program to track chloride levels in strategically located ground water wells (receiving water). The City has identified three wells (PO-VPB-01, PO-VPB-03 and Pollock Well No.6) to monitor the impact of recycled water application in groundwater.

    The following are the average background concentrations for the chloride in the three wells.

Well No.	Chloride Background Concentration (mg/L)
PO-VPB-01	79
PO-VPB-03	81
Pollock Well No.6	74

    Chloride groundwater monitoring requirements are outlined in the section II of the accompanying Monitoring and Reporting Program (MRP).

12. This permit contains a receiving water limitation for chloride. All other numeric limitations in this permit apply at end-of-pipe because the City has not submitted a site-specific attenuation study. Interim limits for certain constituents are included in this permit. Pursuant to Section 2231, Title 23, the interim limits will give the City time to complete an attenuation study, and/or make upgrades to their treatment system in order to comply with the final limits for these constituents.

~~12.~~13. The Board adopted a revised Water Quality Control Plan for Los Angeles River Basin on June 13, 1994. This Plan contains water quality objectives for the San Fernando

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Subunit, which is considered to be the receiving waters for ~~wastewater~~ recycled water applied to land. The requirements contained in the Order, as they are met, will be in conformance with the goals of the Water Quality Control Plan.

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APPLICABLE PLANS, POLICIES AND REGULATIONS

~~13.~~14. ***Basin Plan –*** The Regional Board adopted a revised *Water Quality Control Plan for the Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) on June 13, 1994, and amended by various Regional Board resolutions. This updated and consolidated plan represents the Board's master quality control planning document and regulations. The Basin Plan (i) designates beneficial uses for surface and groundwater, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and conform to the State's antidegradation policy, and (iii) includes implementation provisions, programs, and policies to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. This Order implements the plans, policies, and provisions of the Board's Basin Plan.

The Basin Plan (Chapter 3) incorporates Title 22 primary MCLs by reference. This incorporation by reference is prospective including future changes to the incorporated provisions as the changes take effect. Also, the Basin Plan specifies that "Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses." Therefore the secondary MCLs, which are limits based on aesthetic, organoleptic standards, are also incorporated into this permit to protect groundwater quality.

~~14.~~15. ***Resolution No. 97-02 –*** On January 27, 1997, the Regional Board adopted Resolution No. 97-02 in order to develop a long-term solution to the chloride compliance problems stemming from elevated levels of chloride, caused by the drought and the use of water softeners, in supply waters imported into the Los Angeles region. Water Quality Objectives for chloride for the Los Angeles River between Sepulveda Flood Control Basin and Figueroa Street (including Burbank Western Channel only) has been raised from 100 mg/L to 190 mg/L.

~~15.~~16. ***Title 22 of the California Code of Regulations –*** The DHS established criteria for using recycled water. These criteria are codified in Title 22, California Code of Regulations, Chapter 3 Water Recycling Criteria, including such as Sources of Recycled Water, Uses of Recycled Water, and Use of Area Requirements, etc. The DHS adopted revised Water Recycling Criteria that became effective on March 20, 2001. Applicable criteria are prescribed in this Order.

~~16.~~17. ***Antidegradation Policy –*** On October 28, 1968, the State Water Resources Control Board (State Board) adopted Resolution No. 68-16*, Maintaining High Quality Water*, which established an Antidegradation Policy for State and Regional Boards. The State Board has, in State Board Order No. 86-17 and an October 7, 1987 guidance memorandum,

interpreted Resolution No. 68-16 to be fully consistent with the federal antidegradation policy. As a result, the federal antidegradation policy provides some guidance in interpreting State Board Resolution No. 68-16. The State Policy is designed to ensure that a water body will not be degraded resulting from the permitted discharge, except under the conditions established in the State Antidegradation Policy. The provisions of this Order are consistent with the Antidegradation Policy.

~~17.~~18. ***Beneficial Uses*** – In the Basin Plan, the beneficial uses of the San Fernando Valley Groundwater Basin are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

~~18.~~19. The State Board adopted Resolution No. 77-1, Policy with Respect to Water Reclamation in California, which includes principles that encourage and recommend funding for water recycling and its use in water-short areas of the State. On September 26, 1988, the Regional Board also adopted Resolution No. 88-012, *Supporting Beneficial Use of Available Reclaimed Water in Lieu of Potable Water for the Same Purpose,* which encourages the beneficial use of recycled wastewater and supports water recycling projects.

~~19.~~20. California Water Code section 13523.5, Salinity Standards, states: "A Regional Board may not deny issuance of water reclamation requirements to a project which violates only a salinity standard in the Basin Plan." The raising of the chloride limit to 190 mg/l should be consistent with California Water Code section 13523.5, Salinity Standards.

21. A February 24,2004 State Board memorandum from Celeste Cantú to the Regional Board Executive Officers entitled "Incidental Runoff of Recycled Water", provided recommendations regarding regulatory management of incidental runoff. The memorandum state: "To further the goal of maximizing the use of recycled water, the water quality laws should be interpreted in a manner that is consistent with the intent of the Legislature to promote recycled water use." Consequently, incidental runoff from recycled water projects should be handled as follows:

    A. Where reclamation requirements prohibit the discharge of water to waters of the State and discharges are not expected to occur, occasional runoff should not trigger the need for either an individual NPDES permit or enforcement action.

    B. If discharges from reclamation project area occur routinely, such discharges can be regulated under municipal storm water NPDES permit in most cases.

    C. In limited cases, where necessary to address a water quality concern, discharges of recycled water to surface waters may be regulated under an individual NPDES permit. An NPDES permit, however, should not be issued unless necessary to achieve water quality objectives.

    The memorandum also describes the framework for regulating incidental runoff from irrigation systems and from storage ponds without issuing such an NPDES permit. Consequently, the Regional Board should revise this requirement to be consistent with the February 24, 2004 memorandum.

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~~20.~~22. Section 13523 of the California Water Code provides that a Regional Board, after consulting with and receiving recommendations from DHS or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe water recycling requirements for water that is used or proposed to be used as recycled water. Section 13523 further provides **at a minimum**, that the recycling requirements shall include, or be in conformance with, the statewide water recycling criteria established by DHS pursuant to Water Code section 13521.

~~21.~~23. Pursuant to the California Water Code section 13523, the Regional Board has consulted with the DHS regarding the proposed recycling project and has incorporated their recommendations in this Order.

~~22.~~24. The requirements contained in this Order are in conformance with the goals and objectives of the Basin Plan and implement the requirements of the California Water Code and Title 22 California Code of Regulations, Chapter 3 Water Recycling Criteria.

CEQA AND NOTIFICATION

~~23.~~25. The City of Los Angeles prepared a "Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) City of Los Angeles Wastewater Facilities Plan Update" that was reported on October 1990. No significant adverse impacts on ground water quality were identified in the EIS/EIR as a result of proposed irrigation projects.

~~24.~~26. This Title 22 recycled water project for purposes of the California Environmental Quality Act, is the use of tertiary-treated discharge water as recycled water in conformance with DHS regulations and the Regional Board' s Basin Plan. The Regional Board is a CEQA responsible agency for the project and has reviewed the EIS/EIR and concludes that based on substantial evidence set forth in the EIS/EIR that there will be no adverse impact on the environment that can not be mitigated.

~~25.~~27. Pursuant to California Water Code section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to: State Water Resources Control Board, P.O. Box 100, Sacramento, CA 95812, within 30 days of adoption.

The Regional Board has notified the City of Los Angeles and interested agencies and persons of its intent to issue Waste Discharge Requirements and Water Recycling Requirements for the production, distribution and use of recycled water, and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to these Waste Discharge and Water Recycling Requirements.

IT IS HEREBY ORDERED that the City of Los Angeles shall comply with the following:

I. RECYCLED WATER LIMITATIONS

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1. Recycled water used for irrigation shall be limited to disinfected tertiary recycled water only, as proposed. A disinfected tertiary recycled water is wastewater that has been filtered and subsequently disinfected that meets the following criteria:

   A. The filtered wastewater has been disinfected by either:

      a. A chlorine disinfection process that provides a concentration-time (CT) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow. The CT is the product of total chlorine residual and modal contact time measured at the same period. The modal contact time is the amount of time that elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance of the chlorination chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber. The peak dry weather design flow is the arithmetic mean of the maximum peak flow rates sustained over some period of time (for example three hours) during the maximum 24-hour dry weather period. Dry weather period is defined as periods of little or no rainfall.

         For purposes of calculating and demonstrating compliance with the CT requirement, within 30 days after the initial delivery of recycled water, the City shall complete tracer studies under four different flow rates (the maximum, the minimum, and two points in between) to determine the respective modal contact time at the chlorine contact basin. The studies shall follow the protocol outlined in *Tracer Studies in Water Treatment Facilities: A Protocol and Case Studies* published by the American Water Works Association Research Foundation. A curve of flow rate vs. modal contact time, based on the study results, shall be used for estimating the modal contact time at a given flow rate, which is essential for the CT calculation. A final report on the tracer studies shall be submitted to the DHS and the Regional Board within 30 days after the completion of the studies.

         In the interim period before the completion of tracer studies, the theoretical retention time based on the volume of the chlorine contact basin and the design flow rate shall be used as the modal contact time in the calculation of CT.

      b. A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

         F-specific bacteriophage MS-2 means a strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type

Culture Collection (ATCC 15597B1) and is grown on lawns of E. coli (ATCC 15597).

B. The median concentration of total coliform bacteria measured in the disinfected wastewater does not exceed a most probable number (MPN) or a colony forming unit (CFU) of 2.2 per 100 milliliters based on the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN/CFU of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN/CFU of 240 total coliform bacteria per 100 milliliters.

C. A filtered wastewater shall be an oxidized wastewater that has been coagulated and passed through natural undisturbed soil or a bed of filter media under the following conditions:

a. At a rate that does not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems, or does not exceed 2 gallons per minute per square foot of surface area in a traveling bridge automatic backwash filter; and,

b. The turbidity of the filtered wastewater does not exceed any of the following:

i. An average of 2 NTU within a 24-hour period;

ii. 5 NTU more than 5 percent of the time within a 24-hour period; and

iii. 10 NTU at any time.

"NTU" (Nephelometric Turbidity Unit) is a turbidity measurement determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light as measured by Method 2130 B. in *Standard Methods for the Examination of Water and Wastewater,* 20th Edition; Eaton, A. D., Clesceri, L. S., and Greenberg, A. E., Eds; American Public Health Association, Washington, D.C., 1998; p2-8.

c. Continuous chemical addition upstream of the filters is not required if:

i. Final effluent turbidity does not exceed 2 NTU;

ii. The turbidity of the effluent to the filters is continuously measured;

iii. The influent turbidity to the filters does not exceed 5 NTU for more than 15 minutes in any 24-hour period and never exceeds 10 NTU; and,

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iv. There is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes.

D. A coagulated wastewater shall be an oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated upstream from a filter by the addition of suitable floc-forming chemicals.

E. An oxidized wastewater shall be wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

2. The recycled water shall not contain constituents with concentrations in exceeding those in Table P1.

Table P1 – Concentrations of Constituents in the Recycled Water

Constituent	Units	30-Day Average	7-Day Average	Daily Maximum
$BOD_5$20°C	mg/L	20[1]		60[1]
Oil and grease	mg/L	10[1]	---	15[1]
Suspended solids	mg/L	15[1]		40[1]
Settleable solids	mL/L	0.1[1]	---	0.3[1]
Total dissolved solids	mg/L	---	---	900[2]
Chloride	mg/L	---	---	190[3]
Sulfate	mg/L	---	---	300[2]
Boron	mg/L	---	---	1.5[2]
Fluoride	mg/L	---	---	2~~1.2~~[4]
Nitrate-N + nitrite-N	mg/L	---	---	10[2]
Nitrate	mg/L	---	---	45[2]
Nitrate-N	mg/L	---	---	10[2]
Nitrite-N	mg/L	---	---	1[2]
MBAS	mg/L	---	---	0.5[5]

Footnote:

[1]. The existing permit limit has been carried over because relaxing this limitation will have the effect of increasing the amount of allowed pollutant and therefore there is the potential of lowering water quality, inconsistent with the State's Antidegradation Policy.

[2]. This is a Ground Water Quality Objective in the Basin Plan.

[3]. This is based on the revised chloride Water Quality Objective for waterbody of Los Angeles River between Sepulveda Flood Control Basin and Figueroa Street in the Resolution No. 97-02. **However, the chloride concentrations in the aquifers located below the above areas cannot be greater than 150 mg/L, groundwater water quality objective for chloride in the Basin Plan, as a result of using recycled water.**

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[4]. ~~Secondary~~ Maximum Contaminant Level for protection of groundwater ~~aesthetic~~ quality ~~of groundwater~~.

[5]. Secondary Maximum Contaminant Level for protection of aesthetic quality of groundwater.

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3. The pH of the recycled water shall at all times be within the range of 6.5 to 8.5 pH units.

4. Recycled water shall not contain trace, toxic and other constituents in concentrations exceeding the most current applicable Maximum Contaminant Levels (MCLs) for drinking water established by the DHS or at levels that adversely affect the beneficial uses of receiving groundwater. (Attachments A-1, A-3, A-4, and A-6)

5. Recycled water, which could affect the receiving ground water, shall not contain any substances in concentrations toxic to human, animal, or plant life.

6. The radioactivity, inorganic and organic chemical contaminants of the recycled water shall not exceed the limits specified in Sections 64431, 64443, and 64444, Article 5, Chapter 15, Title 22 of the California Code of Regulations, or subsequent revisions. (Attachment ~~2~~A-2).

7. Recycled water shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect the beneficial uses of the receiving groundwater.

8. ~~Recycled water shall not cause a measurable increase in inorganic and organic chemical contaminants in the groundwater~~.The application of recycled water shall not cause groundwaters to contain chemical constituents in amounts that adversely affect any designated beneficial use, nor create a condition of nuisance or pollution in the groundwater.

II. INTERIM LIMITS

1. The City shall comply with the following interim limits from October 6, 2005 until October 6, 2008 in order to conduct an Attenuation Study or to make necessary changes to the Plant in order to meet the final limits. After October6, 2008, the City must comply with the final limits specified in Table P1 of this Order.

Table P2 –Interim Limits

Constituent	Units	Daily Maximum *
Aluminum	µg/L	320
Nitrite-N	mg/L	1.8
PCE	µg/L	9.9
Di(2-ethylhexyl)phthalate	µg/L	24
Thallium	µg/L	2
Iron	µg/L	1060

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*: Daily Maximum is based on maximum effluent concentration.

2. The Discharger shall submit quarterly progress reports (January 15, April 15, July 15 and October 15) to describe the progress of investigations and/or actions undertaken to reduce concentrations of constituents in Table P2 in the effluent, and to achieve compliance with the final limit in this Order by the above-mentioned deadline. The first progress report shall be received at the Regional Board by January 15, 2006.

~~II.~~III. SPECIFICATIONS FOR USE OF RECYCLED WATER

The City shall oversee the end-users such that the following requirements are complied with.

1. The disinfected tertiary recycled water may be used for the following:

   A. Surface irrigation in the following areas:

      a. Food crops*, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop;

      b. Parks and playgrounds;

      c. School yards; ~~and,~~

      d. Unrestricted access golf courses; ~~and~~,

      e. Treatment plant landscape, freeway landscape, cemetery landscape and similar areas.

      * For food crops and any other irrigation use not specified in this section, the City shall obtain approval from the DHS and the Executive Officer of the Regional Board prior to delivery.

   B. Construction water for backfill consolidation, soil compaction, mixing concrete, and dust control at construction sites;

   C. Impoundment; ~~and~~

   D. In-plant cleaning water~~.~~;

   E. Fire fighting;

   F. Cooling water; and,

   G. Other allowable uses as specified in the Water Recycling criteria*.

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* The City shall obtain approval from the DHS and the Executive Officer of the Regional Board for additional uses not specified in this Order prior to delivery of recycled water. Additional requirements may be prescribed by the Regional Board for such uses.

2. Recycled water shall not be used other than those specified in section II.1 unless a revision to engineering report has been submitted to and approved by the DHS for such other uses and/or requirements for these uses have been prescribed by this Regional Board, in accordance with Section 13523 of the California Water Code.

~~III.~~ IV. USE AREA REQUIREMENTS

Use area is an area of recycled water use with defined boundaries, which may contain one or more facilities where recycled water is used.

The City shall be responsible to ensure that all users of recycled water comply with the following:

1. No irrigation areas with disinfected tertiary recycled water shall be located within 50 feet of any domestic water supply well unless all of the following conditions have been met:

   A. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface;

   B. The well contains an annular seal that extends from the surface into the aquitard;

   C. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities;

   D. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well; and,

   E. The owner of the well approves of the elimination of the buffer zone requirement.

2. There shall be no storage or impoundment of disinfected tertiary recycled water within 100 feet of any domestic water supply well.

3. No irrigation shall take place within 50 feet of any reservoir or stream used as a source of domestic water.

4. Use of recycled water shall comply with the following:

   A. Recycled water shall be applied at such a rate and volume as not to exceed vegetative demands and soil moisture conditions. Special precautions must be

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taken to: prevent clogging of spray nozzles, prevent over-watering, and minimize the production of run-off. Pipelines shall be maintained so as to prevent leakage;

B. Any incidental runoff from recycled water projects should be handled as follows~~Any irrigation runoff shall be confined to the recycled water use area and shall not be allowed to escape as surface flow, unless the runoff does not pose a public health threat and is authorized under a National Pollutant Discharge Elimination System (NPDES) permit issued by this Regional Board. For the purpose of this requirement, however, minor amounts of irrigation return water from peripheral areas~~ and shall not be considered a violation of this Order;

a. Where reclamation requirements prohibit the discharge of water to waters of the State and discharges are not expected to occur, occasional runoff should not trigger the need for either an individual NPDES permit or enforcement action.

b. If discharges from reclamation project area occur routinely, such discharges can be regulated under municipal storm water NPDES permit in most cases.

c. In limited cases, where necessary to address a water quality concern, discharges of recycled water to surface waters may be regulated under an individual NPDES permit. An NPDES permit, however, should not be issued unless necessary to achieve water quality objectives.

C. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities, and shall not contact any drinking water fountain; and,

D. Recycled water shall not be used for irrigation during periods of rainfall and/or run-off.

5. All recycled water use areas that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: “RECYCLED WATER – DO NOT DRINK”. Each sign shall display an international symbol similar to that shown in Figure 5. An alternative signage and wording may be used provided they are approved by the DHS.

6. No physical connection shall be made or allowed to exist between any recycled water piping and any piping conveying potable water, except as allowed under Section 7604 of Title 17, California Code of Regulations.

7. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibs (a faucet or similar device to which a common garden hose can be readily attached). Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.

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8. Recycled water use shall not result in earth movement in geologically unstable areas.

~~IV.~~ V. REQUIREMENTS FOR DUAL-PLUMBED SYSTEM

1. "Dual plumbed" means a system that utilizes separated piping systems for recycled water and potable water within a facility and where the recycled water is used for either of the following purposes:

   A. To serve plumbing outlets (excluding fire suppression systems) within a building, or

   B. Outdoor landscape irrigation at individual residences.

~~1.~~2. The public water supply shall not be used as a backup or supplemental source of water for a dual-plumbed recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of Section 7602 (a) and 7603 (a) of Title 17, California Code of Regulations, and that such connection has been approved by the DHS and/or its delegated local agency.

~~2.~~3. The City shall not deliver recycled water to a facility using a dual-plumbed system unless the report required pursuant to Section 13522.5 of the California Water Code, and which meets the requirements set forth in sections IV.3 and/or IV.4 of this Order, has been submitted, and approved by, the DHS and/or its delegated local agency. The Regional Board shall be furnished with a copy of the DHS approval together with the aforementioned report within 30 days following the approval.

~~3.~~4. The report pursuant to Section 13522.5 of the California Water Code shall contain the following information for dual-plumbed systems, in addition to the information required by Section 60323 of Title 22, California Code of Regulations (Engineering Report):

   A. A detailed description of the intended use site identifying the following:

      a. The number, location, and type of facilities within the use area proposing to use dual-plumbed systems;

      b. The average number of persons estimated to be served by each facility on a daily basis;

      c. The specific boundaries of the proposed use site including a map showing the location of each facility to be served;

      d. The person or persons responsible for operation of the dual-plumbed system at each facility; and

      e. The specific use to be made of the recycled water at each facility.

   B. Plans and specifications describing the following:

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a. Proposed piping system to be used;

b. Pipe locations of both the recycled and potable systems;

c. Type and location of the outlets and plumbing fixtures that will be accessible to the public; and

d. The methods and devices to be used to prevent backflow of recycled water into the public water system.

C. The methods to be used by the City to assure that the installation and operation of the dual-plumbed system will not result in cross connections between the recycled water piping system and the potable water piping system. These shall include a description of pressure, dye or other test methods to be used to test the system every four years.

~~4.~~5. Prior to the initial operation of the dual-plumbed recycled water system and annually thereafter, the dual-plumbed system within each facility and use site shall be inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in section D.3.c of this Order. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection and testing for the prior year shall be submitted to the DHS within 30 days following completion of the inspection or testing.

~~5.~~6. The City shall notify the DHS of any incidence of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of discovery of the incident.

~~6.~~7. Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with Section 7605 of Title 17, California Code of Regulations.

~~V.~~VI. GENERAL REQUIREMENTS

1. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.

2. Bypass, discharge, or delivery to the use area of inadequately treated ~~wastewater~~recycled water, at any time, is prohibited.

3. The recycling facility shall be adequately protected from inundation and damage by storm flows and run-off.

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4. Adequate freeboard and/or protection shall be maintained in the recycled water storage tanks and process tanks to ensure that direct rainfall will not cause overtopping.

5. The wastewater treatment and use of recycled water shall not result in problems caused by breeding of mosquitoes, gnats, midges, or other pests.

6. The use of recycled water shall not impart tastes, odors, color, foaming, or other objectionable characteristics to the receiving groundwater.

7. Odors of sewage origin shall not be perceivable any time outside the boundary of the treatment facility.

8. The City shall, at all times, properly operate and maintain all treatment facilities and control systems (and related appurtenances) which are installed or used by the City to achieve compliance with the conditions of this Order. Proper operation and maintenance includes: effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

9. A copy of these requirements shall be maintained at the water reclamation facility so as to be available at all times to operating personnel.

10. The City shall furnish each user of recycled water a copy of these requirements and ensure that the requirements are maintained at the user' s facility so as to be available at all times to operating personnel.

11. The current Title 22 Engineering Report for the San Fernando Valley Water Recycling Project was issued on June 1992. In accordance with Section 13522.5 of the California Water Code, and Title 22, Division 4, Chapter 3, Article 7, Section 60323 of the California Code of Regulations, the City shall file an updated engineering report, prepared by a properly qualified engineer registered in California, ~~of~~for any material change or proposed change in character, location or volume of the recycled water or its uses, and send a copy to the Regional Board and to the DHS for review and approval within one year from the adoption date of October 6, 2005. This updated engineering report shall describe the current treatment plant, their impacts on the recycled water operation, and the operation and maintenance management plan, including a preventive (fail-safe) procedure and contingency plan for controlling accidental discharge and/or delivery to users of inadequately treated recycled water.

~~The City shall prepare Title 22 Engineering Report and send a copy to the Regional Board and the DHS within a year from the adoption date of October 6, 2005.~~

~~VI.~~VII. PROVISIONS

1. Prior to the initial delivery of recycled water to additional projects beyond the current Master Plan, the City shall submit to and obtain approval from the DHS or its delegated local health agency of the master plan for the recycled water distribution system from the Los Angeles-Glendale WRP to use areas. The American Water

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Works Association Guidelines for the Distribution of Non-Potable Water shall be followed including installation of purple pipe, adequate signs, etc. The master plan shall show the final and as-built drawings and maps of the locations of the potable water, sewer, and recycled water pipelines. The drawings shall indicate adequate separation between the recycled and potable domestic water lines that shall be marked clearly or labeled using separate colors for identification. In addition, the master plan shall include, but not limited to, the following information:

A. A description of each use area including, but not limited to, a description of what will be irrigated (e.g., landscape, specific food crop, etc.); method of irrigation (e.g., spray, flood, or drip); the location of domestic water supply facilities adjacent to the use areas; site containment measures; the party responsible for the distribution and use of the recycled water at the site; identification of other governmental entities which may have regulatory jurisdiction over the reuse site(s).

B. A map showing specific areas of use, areas of public access, surrounding land uses, the location and construction details of wells in or near the use areas, location and type of signage, the degree of potential access by employee or the public, and any exclusionary measures (e.g. fencing).

The City shall submit to the Regional Board a copy of the approved master plan and the DHS approval within 30 days of approval.

2. For any extension or expansion of the recycled water system or use areas not covered by the master plan, the City shall submit a report detailing the extension or expansion plan for approval by the DHS or its delegated local health agency. The plan shall include, but not limited to, the information specified in sections VI.1.A. and B. above. Following construction, as-built drawings shall be submitted to the DHS or its delegated local health agency for approval prior to delivery of recycled water.

   The City shall submit to the Regional Board a copy of the approved expansion plan and the DHS approval within 30 days of approval.

3. If the recycled water system lateral pipelines are located along the property lines of homeowners, the City shall provide a buffer zone or other necessary measures between the recycled water lines and the homeowner's property lines to prevent any illegal connection to the recycled water lines. The City shall implement a public outreach program to homeowners to provide information on the use of recycled water.

~~4.Prior to the initial delivery of recycled water, the City shall submit to the DHS for approval of the plans and specifications for that facility:~~

~~5.~~4. The City shall inspect the recycled water use areas on a yearly basis. A report of findings of the inspection shall be submitted to the DHS, County Health Department, and the Regional Board within 30 days after the inspection.

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~~6.Prior to the initial delivery of recycled water, the City shall submit to and obtain approval from the Regional Board and the DHS an amended engineering report, describing the current treatment plant, their impacts on the recycled water operation, and the operation and maintenance management plan, including a preventive (fail-safe) procedure and contingency plan for controlling accidental discharge and/or delivery to users of inadequately treated wastewater.~~

~~7.~~5. The City shall submit to the Regional Board, under penalty of perjury, technical self-monitoring reports according to the specifications contained in the Monitoring and Reporting Program as directed by the Executive Officer.

~~8.~~6. The City shall notify this Regional Board and the DHS by telephone within 24 hours of any violations of recycled water use conditions or any adverse conditions as a result of the use of recycled water from this facility; written confirmation shall follow within 5 working days from date of notification.

~~9.~~7. The City shall notify this Regional Board and the DHS, immediately by telephone, of any confirmed coliform counts that could cause a violation of the requirements. This information shall be confirmed in the next monitoring report. For any actual coliform limit violation that occurred, the report shall also include the cause(s) of the high coliform counts, the corrective measures undertaken (including dates thereof), and the preventive measures undertaken to prevent a recurrence.

~~10.~~8. The direct use of treated ~~wastewater~~recycled water for impoundments and irrigation could affect the public health, safety, or welfare; requirements for such uses are therefore necessary in accordance with Section 13523 of the Water Code.

~~11.~~9. To assess potential increases in overall chloride levels due to the long-term application of recycled water, the City is required to implement a ground water monitoring program to track chloride levels in strategically located ground water wells as identified in the section VI of the Monitoring and Reporting Program (MRP No. 6183).

~~12.~~10. This Order does not exempt the City from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize the recycling and use facilities; and they leave unaffected any further constraint on the use of recycled water at certain site(s) that may be contained in other statutes or required by other agencies.

~~13.~~11. This Order does not alleviate the responsibility of the City to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Expansion of the recycling facility shall be contingent upon issuance of all necessary requirements and permits, including a conditional use permit.

~~14.~~12. After notice and opportunity for a hearing, this Order may be modified, revoked and reissued, or terminated for cause, that include, but is not limited to: failure to comply

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with any condition in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; acquisition of new information which could have justified the application of different conditions if known at the time of Order adoption.

The filing of a request by the City for modification, revocation and reissuance, or termination of the Order; or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

~~15.~~13. The City shall furnish, within a reasonable time, any information the Regional Board or the DHS may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The City shall also furnish the Regional Board, upon request, with copies of records required to be kept under this Order for at least three years.

~~16.~~14. In an enforcement action, it shall not be a defense for the City that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the City shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

~~17.~~15. This Order includes the attached "Standard Provisions Applicable to Waste Discharge Requirements". If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail.

~~18.~~16. This Order includes the attached Monitoring and Reporting Program. If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the Monitoring and Reporting Program prevail.

~~VII.~~VIII. REOPENER

This Order may be reopened to include the most scientifically relevant, and appropriate limitations for this recycling project, including the application of an attenuation factor based upon an approved site-specific attenuation study conducted by the City.

~~VIII.~~IX. EFFECTIVE DATE OF THE ORDER

This Order takes effect upon its adoption.

I, Jonathan S. Bishop, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on October 6, 2005.

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Jonathan S. Bishop
Executive Officer

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